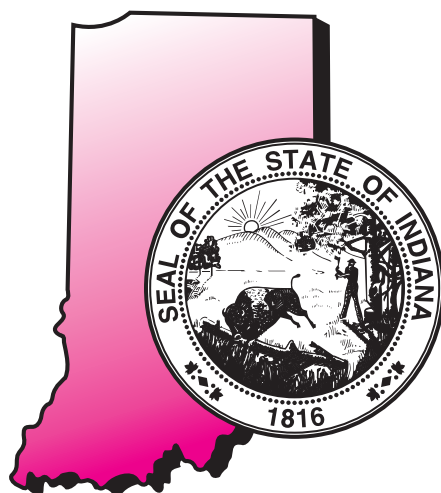


***ISTEP+* Fall 2007**

Indiana Statewide Testing for Educational Progress

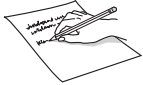
English/Language Arts • Mathematics
Grade 8



Indiana Department of Education

Web Version

Use only a Number 2 pencil to respond to the questions in this book. Responses written in pen CANNOT be scored.



Whenever you see this icon, you will be doing a writing activity. Your writing will not be scored on your personal opinions or choices, but will be scored objectively on

- how clearly you address the prompt
- how well you organize your ideas
- how effectively you express yourself
- how consistently you use correct paragraphing, grammar, spelling, and punctuation

Be sure to use the rules of Standard English. Standard English is the English commonly used in formal writing. It does not include slang or jargon.

Acknowledgments: CTB is indebted to the following for permission to use material in this book.

“Front Porch” by Leslie Nelson Jennings.

Adaptation of “Super Potatoes” by Doug McInnis from *Muse* Magazine’s March 2000 issue, copyright © 2000 by Doug McInnis. Used by permission of the author.

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Test 3: English/Language Arts

School Change

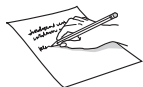
Read the writing prompt below and complete the writing activity.

Your local school board is thinking about changing the school schedule. In the new schedule, four days would be just for academics, and the fifth day would be devoted to athletics or other extracurricular activities, such as field trips or enrichment programs. Do you think this change is a good idea? Think about why other students might disagree with your position.

Write a persuasive essay in which you state whether you agree with the proposed schedule change or not. Include persuasive arguments to convince other students of your view. As you write, consider the concerns of those who may disagree with your position.

Be sure to include

- a statement describing your position
- persuasive reasons to support your position
- details to support your reasons
- an introduction, a body, and a conclusion to your persuasive essay



Use the Pre-Writing/Planning space or additional paper for notes, lists, webs, outlines, or anything else that might help you plan your writing. Then write your persuasive essay on the lined pages. Be sure to write neatly. Using the Editing Checklist on page 9, check your writing for correct paragraphing, grammar, spelling, punctuation, and the use of Standard English.

NOTE: Only your writing on the lined pages in this book will be scored.

Pre-Writing/Planning

Go On



Pre-Writing/Planning



DO NOT WRITE HERE

[illegible]

DO NOT WRITE HERE

DO NOT WRITE HERE

Go On



Test 3

DO NOT WRITE HERE ↑

DO NOT WRITE HERE ↓

DO NOT WRITE HERE



[illegible]

Editing Checklist

- 1 Check your capitalization and punctuation.
- 2 Spell all words correctly.
- 3 Check for sentence fragments or run-on sentences.
- 4 Keep verb tense consistent.
- 5 Make sure subject and verb agree.
- 6 Use words according to the rules of Standard English.
- 7 Remember to paragraph correctly.

STOP! _ _ _ _ STOP! _ _ _ _ STOP! _ _ _ _ STOP! _ _ _ _ STOP!



Test 4: English/Language Arts

For Test 4, you will read a poem and an article. You will answer questions based on each passage. Then you will write an essay on a related topic.

Is there a place that has an important meaning for you? Think about the reasons that this place is important and what you remember about it. The first passage you will read, “Front Porch,” is a poem about an ordinary place that has a special significance. After you read the poem, you will answer some questions about what you have read.

Now read “Front Porch” and do Numbers 1 through 6. You may look back at the poem as often as you like.

Go On



Front Porch

by Leslie Nelson Jennings

People who live in cities never know

The creak of hickory rockers and the hum
Of talk about what happened years ago.

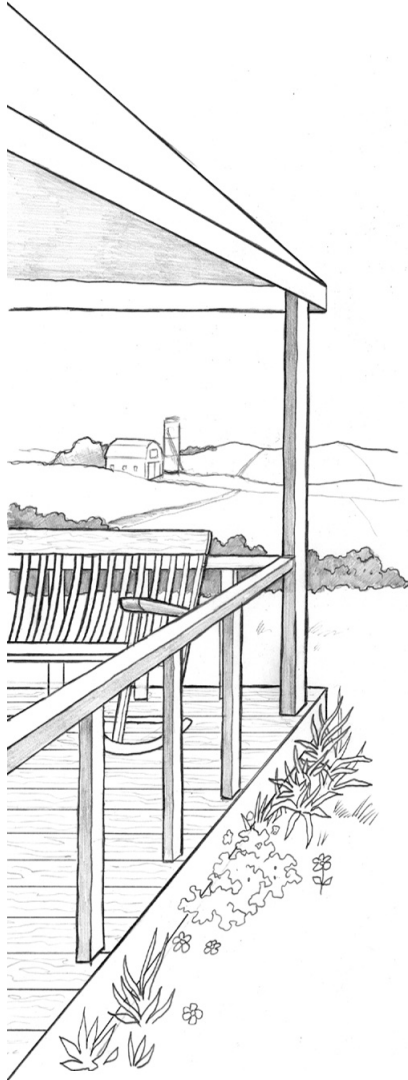
Just sitting on the sunny side of some
Old house can bring us closer to events

Than counting seconds, though the world says not.
If looking backward doesn't make good sense
Tomorrow, then, may be as well forgot.

Those who planned farmsteads hereabouts took time
Enough to square a beam and see it placed.

A man of sixty wasn't past his prime

And nothing worth a penny went to waste.
We can remember many things with pride,
Who built front porches neighbourly and wide.



Go On



- 1 The poet uses the phrases “creak of hickory rockers” and “hum of talk” to
- ☐ illustrate the poverty of the countryside
 - ☐ suggest the pleasant sounds of country life
 - ☐ indicate that country people are often lonely
 - ☐ show that people in the country have active lives

- 2 The word *hereabouts* makes the poem seem
- ☐ informal
 - ☐ confused
 - ☐ humorous
 - ☐ sarcastic

- 3 Read these lines from the poem.

**A man of sixty wasn't past his prime
And nothing worth a penny went to waste.**

What do these lines say about people who lived in rural areas?

- ☐ They were strong and healthy.
- ☐ They had a negative view of life.
- ☐ They had a businesslike attitude.
- ☐ They were hardworking and thrifty.

Go On



4 By describing front porches as “neighbourly and wide,” the poet **MOST LIKELY** means they are places for

- ☐ spending time with the elderly
- ☐ improving the appearance of a house
- ☐ inviting city people to visit the country
- ☐ being available to friends and family

5 Give **TWO** different reasons the poet values country living.

- 1) _____

- 2) _____

6 The chart below contains **TWO** character traits that describe the poet in “Front Porch.” Using information from the poem, give **ONE** example of each trait.

Character Trait	Example
Thoughtful	_____ _____ _____
Uncomplicated	_____ _____ _____

Go On



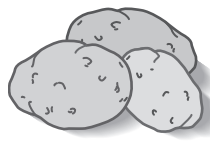
English/Language Arts

Often people come up with creative solutions to big problems. You will now read “Super Potatoes,” an article about a surprising solution to a major problem. After you read the article, you will answer some questions. Then you will write an essay on a related topic.

Now read “Super Potatoes” and do Numbers 7 through 13. You may look back at the article as often as you like.

Go On





Super Potatoes

by Doug McInnis

Some medicines taste like cherries. Some medicines taste like grapes. But scientists now are working on medicines that taste like . . . potatoes! Potatoes? Yes, the new medicines not only *taste* like potatoes, they *are* potatoes.

Turning a potato into a medicine is part of a fast-growing branch of science called biotechnology, which includes genetic engineering. Scientists take things we've all grown up with and change them. When they do this to a potato, it may still look like a potato and taste like a potato, but it could also contain medicine. They haven't sprayed or injected the potato with medicine. They've changed the potato so it creates the medicine as it grows.

Why would they do this? Let's take vaccines, which are medicines used to prevent people from getting diseases. Most kids have been vaccinated for diseases like mumps and measles. Americans are vaccinated against lots of diseases because America is a fortunate country and can afford to pay for medicines.

But in less fortunate countries things are different. "If a vaccine costs more than 10 cents, a kid is not going to get it," said Carol Tacket, a professor of medicine at the University of Maryland. Also, most vaccines can be damaged by heat and need to be kept refrigerated. Even if less fortunate countries could afford the usual vaccines, they couldn't afford refrigerators to keep them cold.

Tacket is part of a team that's making potato vaccines. She hopes these vaccines can someday be used to fight disease in less fortunate countries. Potatoes are cheap and wouldn't have to be refrigerated, and the countries could grow them for their children.

There's another reason to grow vaccines in foods. Food vaccines don't require needles; they aren't given with a shot. In some countries, medical needles are used over and over to save money. That's a bad idea because once a needle is used, it may be contaminated with a bacteria or a virus. When the needle is used again, the shot can make

Go On



the person who gets it very sick. Potato vaccines would avoid this problem, too.

Scientists chose potatoes to make vaccines because potatoes grow fast. Scientists can make an experimental potato vaccine and find out quickly if it works. One day, scientists would like to use bananas, which are slower growing. Children like bananas, and bananas grow easily in many of the countries where contagious diseases are a big problem.

There's another reason scientists want to use bananas for medicine. They don't have to be cooked to taste good. Raw potatoes, on the other hand, taste awful. But unfortunately, since cooking destroys some kinds of vaccines, some potato vaccines have to be eaten raw. "Raw potatoes are yucky," said Tracy Wilkins, the head of biotechnology at Virginia Tech. In the long run, scientists want vaccine plants that don't taste bad if you eat them uncooked. "You could put vaccines into tomatoes, bananas, or other things that could be eaten raw," said Wilkins.

How do scientists make a food into a vaccine? They start with genes, which are found inside all our cells. Genes give orders that tell the body how to make itself. Genes determine the color of our eyes, whether we will be short or tall, and many other things. Plant genes do the same kinds of things in plants.

Scientists can take genes from one plant and put them in another. But they can also take genes from bacteria or viruses and put them in a plant. But why don't the genes make people sick? Because instead of putting all of the bacteria or virus's genes in the potato, scientists only use a few. This causes the potato to make only a small part of the bacteria or virus, too little to make anyone sick. Scientists discovered many years ago that they could use bits of bacteria or viruses to teach the body to fight a disease without causing it.

How do vaccines work? When bacteria or viruses get inside us, they cause our body's white blood cells to make many small disease-fighters. Unfortunately, our disease-fighters are often outnumbered and overwhelmed by the viruses or bacteria. But if you're exposed to a disease for which you've been vaccinated, your body will "remember" the virus or bacterium and be ready for it. Your body, recognizing an old enemy, immediately starts making lots of disease-fighters.

How do you turn a potato into a vaccine? Scientists put the vaccine—a piece of virus gene—inside a potato gene. They do this by first putting the vaccine into a plant bacterium. Plant bacteria like to attack plant cells, and scientists let them invade cells that have been removed from a potato. Then they

Go On



grow potatoes from the invaded cells. But these aren't normal potatoes. They're potatoes with built-in vaccines that were brought in by the bacteria.

Dwayne Kirk, a scientist with the Boyce Thompson Institute, said the first plant vaccines for general use could be available in about four years. Although these and other plant vaccines probably will be used in other countries, they also could be used in the United States. American kids already get lots of vaccine shots

and may get even more in the future. "Whenever we cut down the number of injections and replace them with edible vaccines," said Kirk, "I think it will make children a lot happier."



Doug McInnis and his wife, Liz, grow several kinds of potatoes in the backyard garden of their mile-high home in Casper, Wyoming. But they prefer them cooked.

7 Using information from the article, choose the statement that BEST explains why "Super Potatoes" is an effective title for this article.

- ☐ The potatoes grow very fast.
- ☐ The potatoes are unusually large.
- ☐ The potatoes have added benefits.
- ☐ The potatoes taste especially good.



- 8 According to the article, what are “genes”?
- ☐ disease-fighters produced by the body
 - ☐ organisms that cause disease in the body
 - ☐ medicinal substances that extend the life of plants and animals
 - ☐ cellular material that determines the features of plants and animals

- 9 Using information from the article, give TWO different reasons that scientists are working to produce edible vaccines from plants.

1) _____

2) _____

- 10 Which statement from the article expresses an OPINION?
- ☐ “Tacket is part of a team that’s making potato vaccines.”
 - ☐ “Food vaccines don’t require needles.”
 - ☐ “Raw potatoes, on the other hand, taste awful.”
 - ☐ “Scientists can take genes from one plant and put them in another.”

Go On



11

Using information from the article, give TWO different reasons that scientists think bananas might be a better food than potatoes to carry vaccines.

1) _____

2) _____

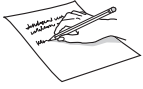
12

Which of the following would be the BEST source of additional information about potato vaccines?

- ☐ a family doctor
- ☐ a public health official
- ☐ the author of the article
- ☐ the researchers in the article



13



The author of “Super Potatoes” seems to favor doing more research on the use of plant genes to make vaccines. How does the author make an effective and convincing argument? Write an essay in which you explain your opinion. **In your essay, be sure to include at least THREE different examples from the article to support your response.**

You may use the space below to plan your writing. Using the Editing Checklist on page 22, check your writing for correct paragraphing, grammar, spelling, punctuation, and the use of Standard English. **Remember, your essay should be well organized and have an introduction, a body, and a conclusion.**

NOTE: Only your writing on the lined pages in this book will be scored.

Pre-Writing/Planning

Go On



Essay

Handwriting practice lines for an essay response.



Use only a Number 2 pencil to respond to the questions in this book. Responses written in pen CANNOT be scored.



If you see this symbol, you may use your reference sheet to help solve the problem.



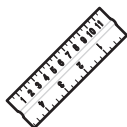
If you see this symbol, you may NOT use a calculator to solve problems in the test.



If you see this symbol, you may use a calculator to solve problems in the test.



This symbol appears at the beginning of the sections that contain gridded-response problems.



If you see this symbol, use your ruler as a straightedge or to solve the problem.



If you see this symbol, use your protractor to solve the problem.

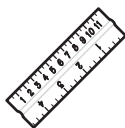
Test 7: Mathematics



Since you may receive partial credit for many of the problems, it is important to show ALL work in the spaces provided in this book. When you see the words **Show All Work**, be sure to

- show all the steps needed to solve the problem
- make your handwriting clear and easy to read
- write the answer on the answer line

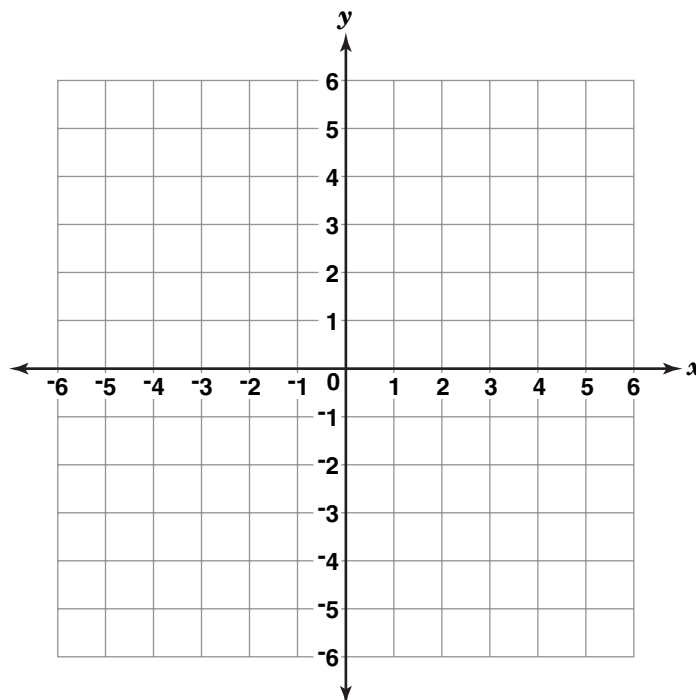
1



Use your ruler as a straightedge.



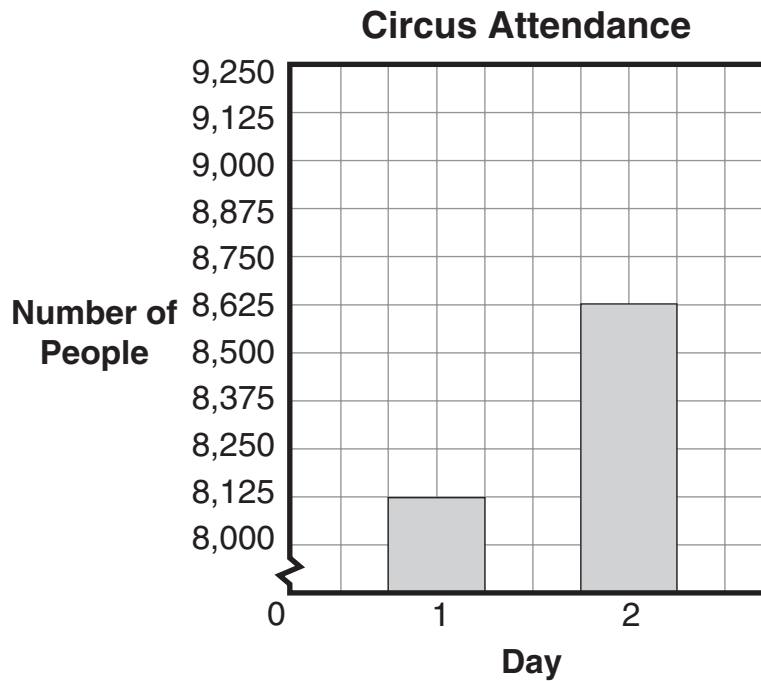
On the coordinate plane below, graph the line with the slope of $\frac{2}{3}$ that passes through the point $(-3, -4)$.



Go On



2 The bar graph below shows attendance at a circus over two days.



How many MORE people attended the circus on Day 2 than on Day 1?

Answer _____ people

On the lines below, explain why it appears that three times as many people attended the circus on Day 2 as on Day 1.

- 3** Blanca's aquarium has three types of fish. She has 14 tetras, 7 angelfish, and some mollies. She wants to purchase more mollies to add to her aquarium. If Blanca doubles the number of mollies, she will have a total of 37 fish.

On the line below, write an equation that can be used to determine the number of mollies (m) that Blanca had before she purchased more.

Equation _____

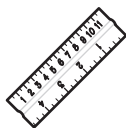
Now solve the equation you wrote to determine the number of mollies that Blanca had before she purchased more.

Answer _____ mollies

Go On

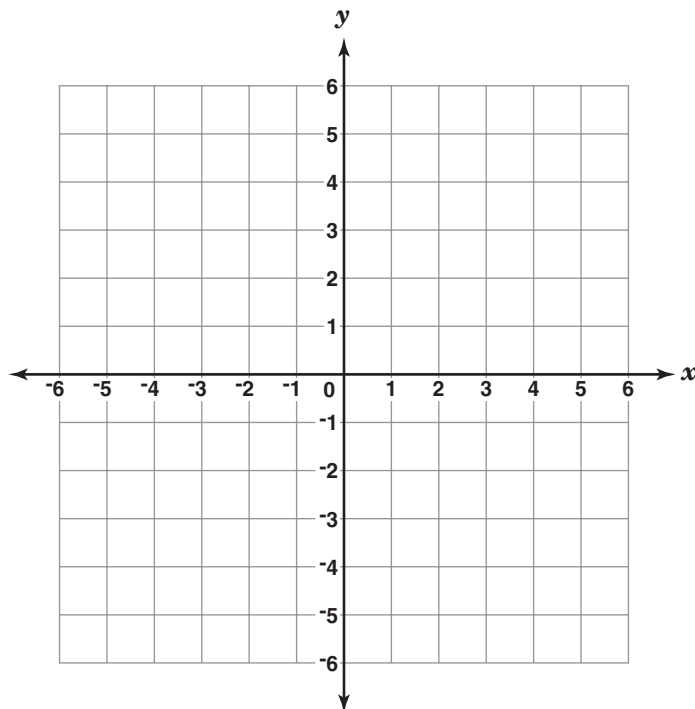


4



Use your ruler to solve this problem.

On the grid below, graph the points $(-2, 4)$, $(3, 4)$, $(2, 2)$, and $(-3, 2)$.



Now connect the points in the order listed above to make a polygon. On the line below, write the name of the polygon you drew.

Answer _____



5

Last Saturday, Rachel shelled walnuts. She was paid \$5.00 for the day, plus an additional \$0.10 for each cup of walnuts she shelled.

If Rachel earned a total of \$17.00, how many QUARTS of walnuts did Rachel shell?

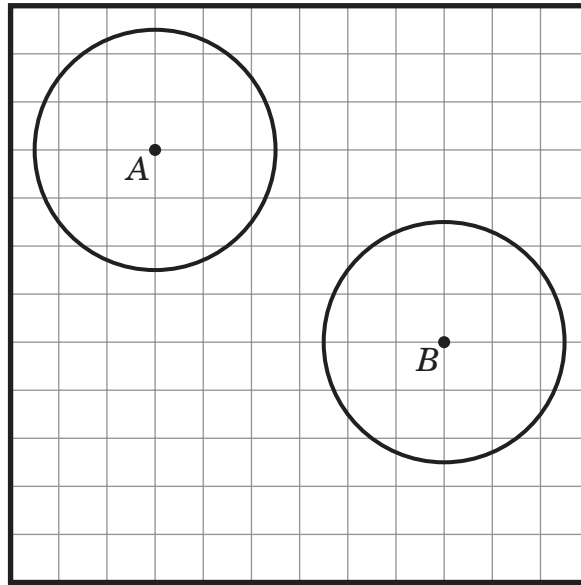
Show All Work

Answer _____ quarts

Go On



- 6 Circle A has been translated 6 units to the right and 4 units down to create circle B , as shown on the grid below.



The circumference of circle A is 15.7 units.

What is the circumference, in units, of circle B ?

Answer _____ units

On the lines below, explain how you determined the answer.

7 Evaluate: $9^3 - 5^4$

Show All Work

Answer _____

STOP! STOP! STOP! STOP! STOP!



Test 8: Mathematics



Since you may receive partial credit for many of the problems, it is important to show ALL work in the spaces provided in this book. When you see the words **Show All Work**, be sure to

- show all the steps needed to solve the problem
- make your handwriting clear and easy to read
- write the answer on the answer line

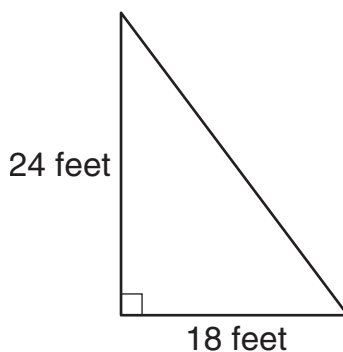
1 Evaluate the following expression for $y = 3$:

$$5y - 24 \div y + 10$$

Show All Work

Answer _____

- 2 A diagram of Kayla's backyard is shown below.



Kayla wants to put a fence around her backyard. A 6-foot section of pre-assembled fencing costs \$19.97 with tax included.

What is the cost of the fencing Kayla needs to fence her entire backyard?

Show All Work

Answer \$ _____

Go On



- 3 Randy surveyed five of his friends to determine how many pets each of them has. His results are shown in the table below.

Pet Survey

Student	Number of Pets
Maggie	5
LeAnn	4
Roberta	2
Hannah	3
Steven	3

Roberta's dog had a litter of 6 puppies after Randy's survey.

On the lines below, explain how adding the puppies would have affected the median of Randy's data.

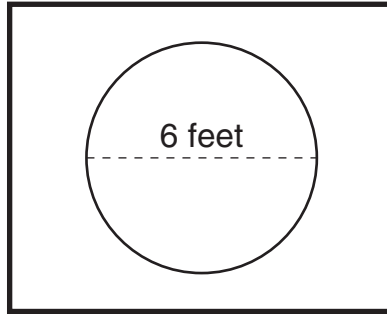
On the lines below, explain how adding the puppies would have affected the mode of Randy's data.

Go On



4

Jenna has a rectangular garden with an area of 80 square feet. In the middle of her garden, she set aside a circular area with a diameter of 6 feet to plant rosebushes.



What is the area, in square feet, of Jenna's garden that will NOT have rosebushes planted?

Show All Work

Answer _____ square feet

Go On



5

The average height of a Grey Kangaroo is 1.75 yards tall. Sean is 5 feet 1 inch tall.



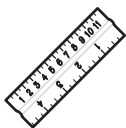
How many more INCHES does Sean need to grow to reach the average height of the Grey Kangaroo?

Show All Work

Answer _____ inches



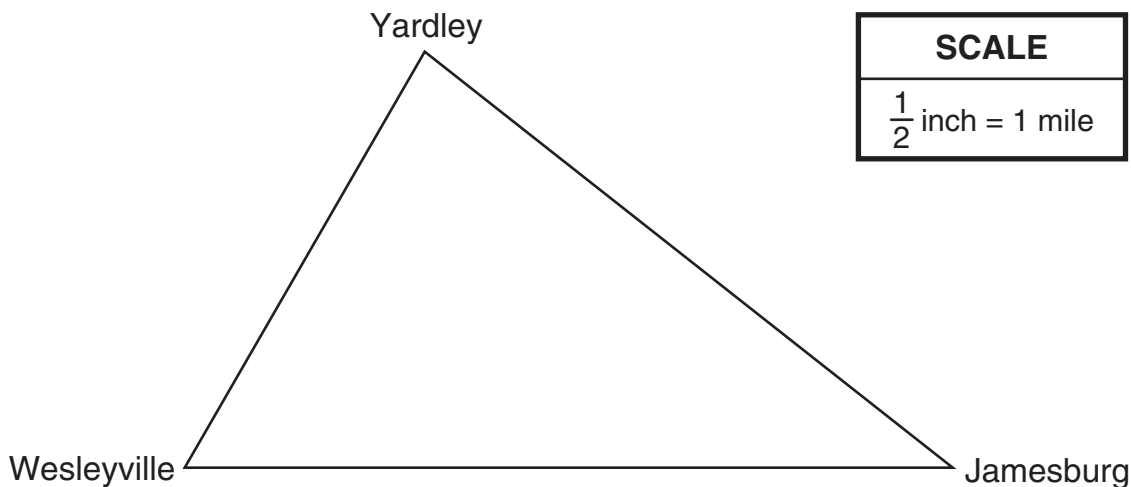
6



Use your ruler to solve this problem.



Drew is a delivery driver. This morning, he drove from Wesleyville to Yardley and then to Jamesburg. He then drove from Jamesburg straight to Wesleyville, as shown in the diagram below.



Drew's average speed was 30 miles per hour.

How many MINUTES did Drew spend driving?

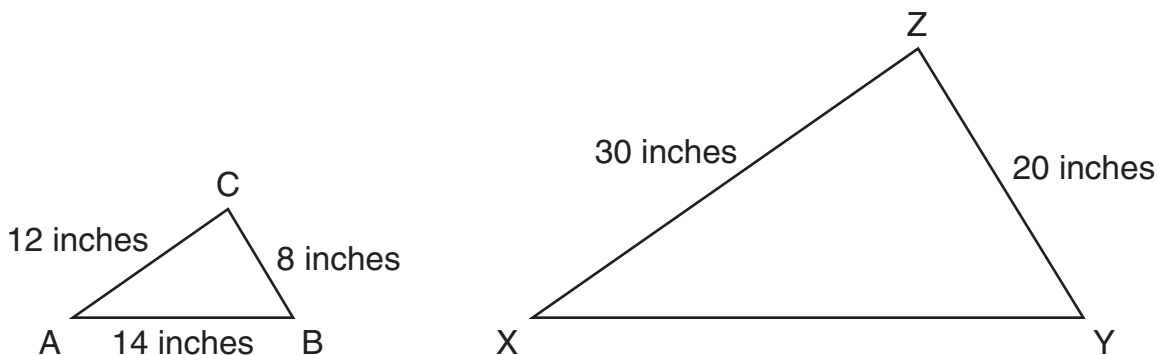
Show All Work

Answer _____ minutes

Go On



- 7 Triangle ABC is similar to triangle XYZ, as shown in the diagram below.



What is the length, in inches, of side \overline{XY} ?

Show All Work

Answer _____ inches

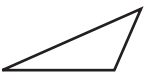




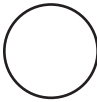

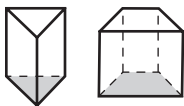



ATTENTION! Please do not leave your punchouts in this book.



STOP! — STOP! — STOP! — STOP! — STOP! —

ISTEP+ Grades 7 and 8 Mathematics Reference Sheet

Shape		Formulas for Area (A) and Circumference (C)	
Triangle		$A = \frac{1}{2}bh = \frac{1}{2} \times \text{base} \times \text{height}$	
Rectangle		$A = lw = \text{length} \times \text{width}$	
Trapezoid		$A = \frac{1}{2}(b_1 + b_2)h = \frac{1}{2} \times \text{sum of bases} \times \text{height}$	
Parallelogram		$A = bh = \text{base} \times \text{height}$	
Square		$A = s^2 = \text{side} \times \text{side}$	
Circle		$A = \pi r^2 = \pi \times \text{radius} \times \text{radius}$ $C = 2\pi r = 2 \times \pi \times \text{radius}$ $\pi \approx 3.14 \text{ or } \frac{22}{7}$	
Figure		Formulas for Volume (V) and Surface Area (SA)	
Rectangular Prism		$V = lwh = \text{length} \times \text{width} \times \text{height}$ $SA = 2lw + 2hw + 2lh$ $= 2(\text{length} \times \text{width}) + 2(\text{height} \times \text{width}) + 2(\text{length} \times \text{height})$	
General Prisms		$V = Bh = \text{area of base} \times \text{height}$ $SA = \text{sum of the areas of the faces}$	
Cylinder		$V = \pi r^2 h = \pi \times \text{radius} \times \text{radius} \times \text{height}$ $SA = 2\pi r^2 + 2\pi rh$ $= 2 \times \pi \times \text{radius} \times \text{radius} + 2 \times \pi \times \text{radius} \times \text{height}$ $\pi \approx 3.14 \text{ or } \frac{22}{7}$	

Conversions

1 yard = 3 feet = 36 inches
 1 mile = 1,760 yards = 5,280 feet
 1 acre = 43,560 square feet
 1 hour = 60 minutes
 1 minute = 60 seconds

1 liter = 1000 milliliters = 1000 cubic centimeters
 1 meter = 100 centimeters = 1000 millimeters
 1 kilometer = 1000 meters
 1 gram = 1000 milligrams
 1 kilogram = 1000 grams

1 cup = 8 fluid ounces
 1 pint = 2 cups
 1 quart = 2 pints
 1 gallon = 4 quarts

1 pound = 16 ounces
 1 ton = 2,000 pounds

Equation of a Line

Slope-Intercept Form:

$$y = mx + b$$

where m = slope and b = y-intercept

Slope of a Line

Let (x_1, y_1) and (x_2, y_2) be two points in the plane.

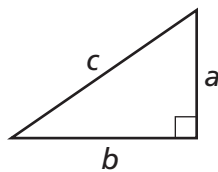
$$\text{slope} = \frac{\text{change in } y}{\text{change in } x} = \frac{y_2 - y_1}{x_2 - x_1} \text{ where } x_2 \neq x_1$$

Distance Formula

$$d = rt$$

distance = rate \times time

Pythagorean Theorem



$$a^2 + b^2 = c^2$$

Temperature Formulas

$$^{\circ}\text{C} = \frac{5}{9}(\text{F} - 32)$$

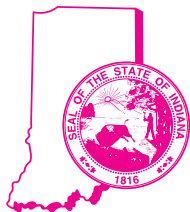
$$^{\circ}\text{Celsius} = \frac{5}{9} \times (^{\circ}\text{Fahrenheit} - 32)$$

$$^{\circ}\text{F} = \frac{9}{5}\text{C} + 32$$

$$^{\circ}\text{Fahrenheit} = \frac{9}{5} \times ^{\circ}\text{Celsius} + 32$$

Response Book for Grade 8

English/Language Arts • Mathematics



Indiana Department of Education